CLAIMS

1. A thermoplastic resin composition which is obtained by melt-kneading a mixture comprising (1) 55-75% by weight of a crystalline polypropylene-based resin, (2) 10-30% by weight of an elastomer comprising a vinyl aromatic compound-containing rubber or comprising a vinyl aromatic compound-containing rubber and an ethylene-α-olefin random copolymer rubber and (3) 15-25% by weight of talc having an average particle diameter of not more than 3 μm and which satisfies the following conditions (a) - (c):

(a) when the crystalline polypropylene-based resin (1) has been melt-kneaded with the elastomer (2) comprising a vinyl aromatic compound-containing rubber or comprising a vinyl aromatic compound-containing rubber and an ethylene-α-olefin random copolymer rubber, the long period obtained by small angle X-ray scattering attributable to the vinyl aromatic compound-containing rubber is 12-24 nm,

(b) when the crystalline polypropylene-based resin (1) has been melt-kneaded with the elastomer (2) comprising a vinyl aromatic compound-containing rubber or comprising a vinyl aromatic compound-containing rubber and an ethylene-α-olefin random copolymer rubber, elastomer particles which undergo micro phase separation to have the form of particle, and are present in the vicinity of the interface between particles of the elastomer and the crystalline

polypropylene-based resin as matrix, have a particle diameter of not more than 30 nm, and

(c) the difference ($\Delta Tg = Tg_1 - Tg_2$) between the glass transition point (Tg_1) assigned to the crystalline propylene homopolymer portion of the crystalline polypropylene-based resin (1) and the glass transition point (Tg_2) assigned to the crystalline propylene homopolymer portion of a composition obtained by melt-kneading the crystalline polypropylene-based resin (1) with the elastomer (2) comprising a vinyl aromatic compound-containing rubber or comprising a vinyl aromatic compound-containing rubber and an ethylene-α-olefin random copolymer and talc (3) is 4.0-7.0℃.

2. The thermoplastic resin composition according to claim 1 wherein the crystalline polypropylene-based resin (1) is a crystalline polypropylene selected from (1A) or (1B) described below:

(1A) a crystalline ethylene-propylene block copolymer wherein the propylene homopolymer portion, which is the first segment, has a Q value of 3.0-5.0, which value is the ratio of the weight average molecular weight (Mw) to the number average molecular weight (Mn) determined by the gel permeation chromatography (GPC) method, has an isotactic pentad fraction of not less than 0.98 as calculated from ^{13}C-NMR and has an intrinsic viscosity of 0.7-1.1 dl/g as determined in tetralin solution at 135℃, and the ethylene-propylene random copolymer portion, which is

the second segment, has an intrinsic viscosity of 5.0-8.0 dl/g as determined in tetralin solution at 135℃ and has an ratio of ethylene to propylene of 25/75 to 35/65 (weight ratio), and

(1B) a mixture of the crystalline ethylene-propylene block copolymer (1A) with a crystalline propylene homopolymer having a Q value of 3.0-5.0 as determined by the GPC method, an isotactic pentad fraction of not less than 0.98 as calculated from ^{13}C-NMR and an intrinsic viscosity of 0.7-1.1 dl/g as determined in tetralin solution at 135℃.

3. The thermoplastic resin composition according to claim 1 wherein the elastomer (2) is an elastomer comprising a vinyl aromatic compound-containing rubber and at least one kind of ethylene-α-olefin random copolymer rubber.

4. The thermoplastic resin composition according to claim 3 wherein the elastomer (2) is an elastomer comprising a vinyl aromatic compound-containing rubber and at least two kinds of ethylene-α-olefin random copolymer rubbers.

5. The thermoplastic resin composition according to claim 4 wherein the elastomer (2) is an elastomer which comprises (2A) a vinyl aromatic compound-containing rubber described below and at least two kinds of ethylene-α-olefin random copolymer rubbers selected from (2B) an ethylene-octene random copolymer rubber, (2C) an ethylene-butene random copolymer rubber

or (2D) an ethylene-propylene random copolymer rubber and wherein the contents of the respective rubber components relative to the whole of the composition are as shown below:

(2A) 3-15% by weight of a vinyl aromatic compound-containing rubber which is a block copolymer comprising a vinyl aromatic compound polymer block and a conjugated diene type polymer block, 80% or more of the double bonds of the conjugated diene portion being hydrogenated, and has a Q value of not more than 2.5 as determined by the GPC method, a vinyl aromatic compound content of 10-20% by weight and a melt flow rate of 1-15 g/10 min as determined according to JIS-K-6758 at 230℃,

(2B) 0-15% by weight of an ethylene-octene random copolymer rubber which has a Q value of not more than 2.5 as determined by the GPC method, an octene content of 15-45% by weight and a melt flow rate of 1-15 g/10 min as determined according to JIS-K-6758 at 190℃,

(2C) 0-10% by weight of an ethylene-butene random copolymer rubber which has a Q-value of not more than 2.7 as determined by the GPC method, a butene content of 15-35% by weight and a melt flow rate of 1-15 g/10 min as determined according to JIS-K-6758 at 190℃, and

(2D) 0-10% by weight of an ethylene-propylene random copolymer rubber which has a Q value of not more than 2.7 as determined by the GPC method, a propylene content of 20-30% by weight and a melt flow rate of 1-

15 g/10 min as determined according to JIS-K-6758 at 190℃.

6. The thermoplastic resin composition according to claim 5 wherein the content of the ethylene-octene random copolymer rubber (2B) relative to the whole of the composition is 5-15% by weight.

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7. The thermoplastic resin composition according to claim 5 or 6 wherein the thermoplstic resin composition satisfies the following expressions 1)-3) and the melt flow rate of the composition is not less than 35 g/10 min as determined according to JIS-K-6758 at 230℃:

1) $(X_{pp}) + (X_{st}) + (X_{EOR}) + (X_{EBR}) + (X_{EPR}) + (X_{talc}) = 100$,

2) $0.20 \leqq \{[(Y_{BC}) \times (Y_{EP}) + (X_{st}) + (X_{EOR}) + (X_{EBR}) + (X_{EPR})]/100\} \leqq 0.30$, and

3) $0.1 \leqq \{(Y_{BC}) \times (Y_{EP})/[(Y_{BC}) \times (Y_{EP}) + (X_{st}) + (X_{EOR}) + (X_{EBR}) + (X_{EPR})]\}$,

wherein (X_{pp}) is the content (% by weight) of the crystalline polypropylene, (X_{st}) is that of the vinyl aromatic compound-containing rubber (2A), (X_{EOR}) is that of the ethylene-octene random copolymer rubber (2B), (X_{EBR}) is that of the ethylene-butene random copolymer rubber (2C) and (X_{EPR}) is that of the ethylene-propylene random copolymer rubber (2D); (Y_{BC}) is the content (% by weight) of the crystalline ethylene-propylene block copolymer (1A) and (Y_{EP}) is the weight fraction (weight fraction being content (% by weight)/100) of the ethylene-propylene random copolymer portion, which is

the second segment in the crystalline ethylene-propylene block copolymer (1A); and (X_{talc}) is the content (% by weight) of talc.

8. An injection molding obtained by injection-molding the thermoplastic resin composition according to claims 1-7.

9. The injection molding according to claim 8 which is an injection molding for automobile interior and exterior trims.